Issued: December 8, 1996

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I. Introduction

The Telecommunications Act of 1996 (the Act) requires the Federal Communications Commission (FCC), and it permits state commissions, to establish mechanisms to maintain universal telephone service. This includes at least three kinds of programs: support for high cost areas; support for schools, libraries and rural health care centers; and support for low-income persons. This paper is concerned with the first of these, support for high cost areas.

On November 8, 1996, the Federal-State Joint Board in CC Docket 96-45 issued a Recommended Decision about how universal service funds should be distributed and how they should be collected.[1] On the collection side, the Joint Board recommended imposing a uniform charge on the net revenues of interstate telecommunications carriers. The Joint Board was not able to agree, however, on the revenue base for high cost support, specifically whether revenue should be derived from a charge on the *interstate* revenues of interstate carriers or on the *combined* (interstate and intrastate) revenues of such carriers.

This paper addresses the legal, policy and financial issues raised by the interstate versus combined revenues issue. It is intended to provide information to the states as they prepare their own comments to the FCC. Comments are due on or before December 16, 1996. Reply comments are due January 10, 1997.

This paper was prepared by the Staff Subcommittee on Communications of the National Association of Regulatory Utility Commissioners,[2] with significant assistance from the Telecommunications Industries Analysis Project.

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[1] CC Docket 96-45, Recommended Decision, Nov. 8, 1996 (hereafter "Joint Board Recommendations").

[2] The 1996 annual meeting of NARUC encouraged the Staff Subcommittee on Communications to develop and distribute an analysis of the financial impact of the combined revenue or interstate revenues issue, and to include in the analysis various levels of federal universal service support and various cost estimates derived from proxy models currently under consideration by the FCC. The subcommittee was also encouraged to provide a policy options analysis regarding this issue, to be distributed to member state commissions.

II. High Cost Support

A. Distribution Issues

The Act contains numerous standards and principles to guide the design of universal service. Some of these apply to both the distribution and collection of funds. One such requirement is that the federal mechanism for universal service be "specific, predictable and sufficient."[3] In addition, the Joint Board recommended that all aspects of universal service mechanisms be "competitively neutral."[4]

The Act also describes four principles that apply primarily to the distribution of funds:

> 1. Quality services should be available at just, reasonable, and affordable rates.[5]
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> 2. Access to advanced telecommunications and information services should be provided in all regions of the Nation.[6]
>
> 3. Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.[7]
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> 4. Elementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services.[8]

To implement these principles, the Joint Board proposed a system with several components. One component would be aimed primarily at low-income consumers. Other

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[3] 47 U.S.C. § 254(b)(5).

[4] Joint Board Recommendations, ¶ 23.

[5] 47 U.S.C. § 254(b)(1).

[6] 47 U.S.C. § 254(b)(2).

[7] 47 U.S.C. § 254(b)(3).

[8] 47 U.S.C. §§ 254(b)(6), 254(h).

elements would apply to schools, libraries and rural health care providers. Possibly the largest program, however, would be a "high-cost" program to transfer funds to eligible telecommunications carriers serving high cost areas.

The purpose of the high cost program is to substitute an explicit transfer for the implicit transfers that now occur between low-cost areas and high-cost areas, and between low-cost customers and high-cost customers. High cost support would be calculated in four steps:

1. The costs of providing "supported services"[9] are estimated over relatively small geographic areas.[10]

2. A nationally uniform "benchmark" is set, equal to the national average revenue per loop derived by local exchange carriers from local, discretionary, and access services.[11]

3. The "revenue need" of each geographic area is defined for each of the small geographic areas as the difference between the area's cost and the revenue benchmark. For example, if the revenue benchmark were set at $20 per month and the proxy model shows that the cost of providing service in a particular area is $50 per month, the revenue need for that area would be $30 per access line.

4. Federal high cost support would then be provided to eligible telecommunications carriers providing service in the small geographic area.[12] While not discussed in the Joint Board's Recommended Decision, some of the options considered below assume that federal support might be less than 100 percent of the revenue need.

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[9] These include, for example, voice grade access to the public switched network, single party service, and touch tone dialing. Joint Board Recommendations, ¶s 47-50.

[10] Both BCM2 and Hatfield use the census block group as their smallest unit of calculation.

[11] Joint Board Recommendations, ¶ 312. The revenue benchmark must also be set low enough so that the statutory goals are met, including the goal that rates in rural, insular, and high cost areas are reasonably comparable to urban rates.

[12] The Joint Board recommended that support be limited to a single line in each principal household. It also recommended that some business lines be eligible for support as well, although the two kinds of lines would have different revenue benchmarks. Joint Board Recommendations, ¶s 89-92, 312.

There is some disagreement about whether the FCC has authority under this Act to pay less than 100 percent of identified need in high cost areas. This is discussed below.

The first of the four steps is to estimate costs. The Joint Board recommends that "forward-looking" costs be used for this purpose. Models that produce forward-looking cost estimates are called "proxy models" because they use independent factors, or proxies, as inputs.[13]

Proxy models estimate the costs of constructing and operating a new network. The location of existing wire centers is assumed, but otherwise the models build a virtual new network around each such wire center. The new network is based upon economically optimal designs, and assumes the use of current technology and equipment. Current costs for equipment and labor are also assumed. The Joint Board recommended the use of proxy models because they are not based upon any individual company's costs, and thus provide a competitively neutral estimate of cost.[14]

Four proxy models were submitted to the Joint Board: the BCM,[15] the BCM2,[16] Cost Proxy Model,[17] and the Hatfield Model[18]. While the Joint Board found none of these models satisfactory, it recommended criteria by which a proxy model should be evaluated by the FCC.[19] It is beyond the scope of this paper to evaluate the proxy models. Rather, we present separately the results of the BCM2 and Hatfield models to illustrate the results from two leading proxy models. If the model ultimately adopted by the FCC resembles either, each state will be able to estimate the local effect of the federal high cost program.

In addition to support for high cost areas, the Joint Board also recommended support for schools and libraries, for rural health care providers, and for low-income consumers. Just as with the high cost program, the FCC must decide whether these programs are to be supported by a charge on interstate revenues or on combined carrier

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[13] Joint Board Recommendations, ¶ 270, 275. Such factors include population density, road mileage, and even soil characteristics.

The Joint Board also recommended that rural local exchange carriers be allowed an exemption from this rule for three years, followed by a three year phase-in. *Id.* ¶ 272.

[14] Joint Board Recommendation, ¶ 276.

[15] BCM was developed by a consortium of local and interexchange companies, including MCI, Sprint Corporation, NYNEX and U.S.West.

[16] BCM2 was developed by a consortium of local and interexchange companies, and is now supported by Sprint Corporation and U.S.West.

[17] The Cost Proxy Model was developed by Pacific Bell.

[18] The Hatfield Model was developed by Hatfield Associates, Inc., under sponsorship of AT&T and MCI.

[19] Joint Board Recommendations, ¶ 268.

revenues.[20] These programs have, however, been omitted from the current analysis, in part because of the difficulty of modeling the distribution of funds under them.[21] Readers should understand that the financial modeling presented here considers only the high cost fund, and not these other programs.

The Act also contemplates that states may adopt their own "specific, predictable and sufficient"[22] mechanisms to support universal service. These programs cannot be "inconsistent with" FCC rules.[23] State programs might seek to accomplish any of several things:

1. State high cost programs might provide additional financial support for services already partially supported by the federal high cost program.
   a) States might support a lower revenue benchmark.[24]
   b) States might finance any difference between revenue need and federal funding.[25]

2. State programs might support additional services beyond those identified by the Joint Board, such as white pages listings[26] or internet service.

3. State programs might want to provide benefits to particular types of customers:

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[20] The Joint Board made more specific recommendations concerning schools and libraries. It recommended that funding for these purposes be derived from both interstate and intrastate revenues of interstate carriers.

[21] The Joint Board encouraged the FCC to seek additional information and parties' comments on this issue prior to adopting rules. Joint Board Recommendations, ¶ 560.

[22] 47 U.S.C. § 254(b)(5).

[23] 47 U.S.C. § 254(f).

[24] For example, if the FCC were to establish a revenue benchmark of $30, states might elect to support a revenue benchmark of $20. *See* Option 1-B, below. Alternatively, states might want to establish a lower benchmark for single line business customers.

[25] For example, Option 1-D below considers the results if the FCC were to support only 40 percent of the revenue need of carriers, and assumes that states might want to finance the remaining 60 percent. *See* Option 1-D, below. Funding less than 100 percent of identified need may not be compatible with the Act.

[26] California has a universal service program and has included a "white pages listing" in the services supported by universal service. This was not recommended by the Joint Board. Joint Board Recommendations, ¶ 68.

a) States might provide services of benefit to low-income customers such as "warm line," support for optional services at reduced rates, or multi-lingual information regarding billing and rates.
b) States might provide benefits for multi-line business customers.

B. Revenue Issues

The Act and the Joint Board have also defined standards and principles for raising revenue. As mentioned above, the mechanism for universal service must be "specific, predictable and sufficient,"[27] and all aspects of the high cost mechanism should be "competitively neutral."[28]

In addition, the Act requires that only the providers of interstate services can be required to contribute to the FCC's universal service programs, and their contributions must be "equitable and nondiscriminatory."[29] The Joint Board has recommended that these contributions should be made on the basis of the gross revenues of carriers, net of payments to other carriers.[30]

The Joint Board could not agree on a revenue base for the high cost program. Some members preferred that the federal program for high cost support be financed by a charge on only the interstate revenues of carriers providing interstate services ("interstate revenues option"). Others preferred that the charge apply to the combined (interstate and intrastate) revenues of such carriers ("combined revenues option").[31]

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[27] 47 U.S.C. §§ 254(b)(5), (d).

[28] Joint Board Recommendations, ¶ 23.

[29] 47 U.S.C. § 254(d).

[30] Joint Board Recommendations, ¶ 807. For example, if a carrier charged a customer $1.00 for a service but paid $0.60 to another carrier as part of providing that service, only $0.40 of net revenue would be subject to the universal service charge.

Not all parties agreed with this recommendation. *See*, Joint Board Recommendations, ¶s 808-812.

[31] The Joint Board similarly disagreed with regard to funding for low-income assistance programs. With regard to support for schools and libraries, the Joint Board did recommend that support come from the combined revenues of interstate carriers. Joint Board Recommendations, ¶ 817.

C. Other Related Issues

Under the Act, the FCC is charged with restructuring several major aspects of the telecommunications industry. Some of these areas interact strongly with universal service mechanisms. While it is beyond the scope of this paper to provide a detailed analysis of any such change, each state commission should be generally aware of these parallel developments and may want to keep them in mind as it formulates its positions on universal service issues.

The FCC issued interconnection rules under sections 251 and 252 of the Act in August, 1996.[32] While the Order has now been stayed,[33] the original rule provided that the prices of unbundled loops must be stated for at least three "deaveraged" zones in each state. Should any such rule be adopted, the need for high cost support may increase following increased retail rates in high cost areas.

The FCC is expected to issue an order on access charges in April, 1997, and is expected to reduce the access revenues available to local exchange carriers. In that case, the FCC may also need to increase other sources of local carrier revenues. Some of the ways to accomplish this might decrease fixed monthly charges to customers;[34] others, however, could increase fixed monthly charges.[35] In either case, the changes could affect the need for high cost support.

Finally, the process of separations itself could affect the need for universal service programs. To the extent that separations changes shift revenues and expenses between the

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[32] *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, *Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers*, CC Docket No. 95-185, First Report and Order, FCC 96-235 (released 8/29/96).

[33] *Iowa Utilities Board v. FCC*, ___ F.2d ____ (8th Cir., rel. Oct. 15, 1996).

[34] The Joint Board recommended against increasing the monthly Subscriber Line Charge (SLC), currently capped at $3.50 per month for residential customers and single-line business customers. Joint Board Recommendations, ¶ 769. Indeed, the Joint Board recommended that the SLC be decreased if the FCC should decide to base collection of universal service support funds on the combined revenues of interstate carriers. *Id.*, ¶ 772.

[35] The Joint Board recommended that the FCC consider revising the current CCL charge structure so that LECs no longer are required to recover non-traffic-sensitive loop costs from IXCs on a traffic-sensitive basis. One "promising alternative" identified by the Joint Board would be to allow LECs to charge IXCs a flat, per-line charge. Joint Board Recommendations, ¶ 736. If such a fixed charge were adopted, IXCs would be free to collect this expense in any manner they chose, including a fixed monthly charge to their customers. If the FCC adopted the "fixed charge" recommendation, and if carriers chose to recover this cost in the same manner, this might effectively increase the aggregate fixed charges paid by some or all customers each month.

interstate and intrastate jurisdictions, they can affect the balance between rates collected by various jurisdictions and therefore may affect the rates needed to support local service. To the extent that significant separations changes are expected in the future, they could also affect the need for high cost support.

III. Data Sources and Limitations

In constructing models describing how the interstate revenue option and the combined revenue option would work, three significant data sets were required. Two of these were the outputs of proxy models. This paper utilizes the outputs of the BCM2 proxy model and the Hatfield proxy model. Both were studied by the Joint Board. but neither model matches all of the details of the distribution system recommended by the Joint Board. For example, the models do not estimate the costs of providing support for single line business customers.[36]

The two proxy models produce substantially different results. Under comparable assumptions, the BCM2 model generally produces larger transfers to eligible telecommunications carriers. The differences between the two models are large enough to influence policy decisions. Therefore, the results of each model are presented separately.

In the analysis below, the revenue benchmark of $20 per month is the first option presented (options 1-A and 2-A). This $20 figure may be lower than the revenue benchmark actually under consideration at the FCC. The Joint Board recommended that the revenue benchmark be set commensurate with the *nationwide* average revenues that a LEC can expect to derive each month from each access line.[37] Benchmarks of $25, $30 or even $35 may currently be under consideration at the FCC.

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[36] Also, while the Joint Board has recommended the inclusion of revenues per line from services other than basic local exchange service (such as discretionary and access revenues) in the revenue benchmark, it is not clear that either of the proxy models recognize or are capable of recognizing the costs of those services. Finally, there may be differences between the models' data and the Joint Board recommendations concerning household counts. For a more detailed description of data limitations, see *1995 Calculated Interstate and Intrastate Revenues for the Proposed Universal Service Fund and Formats for Comparisons of Different Benchmarks*, Telecommunications Industries Analysis Project, Dec. 4, 1996.

[37] Joint Board Recommendations, ¶ 310. This figure is understood to be in the range of $25 to $35 per month.

Some concern has been expressed that the inclusion of discretionary and access services in the revenue benchmark may create incentives inconsistent with the Act's intention to remove implicit subsidies. Carriers might have an incentive to continue to price above TELRIC for discretionary services.

Some parties have suggested that the Act requires that the benchmark be commensurate with the *urban* average revenue-per-line, a figure that may be lower than the overall average. They assert that only with such an urban-based revenue benchmark can federal universal service programs be sufficient to ensure that rates in rural, insular, and high cost areas are reasonably comparable to rates in urban areas.[36]

A revenue benchmark of $20 is used below as the base case (options 1-A and 2-A). However, the attachments contain sufficient information to make possible calculations using $30 as a base case.

The third data set required for this paper are the revenues, by state, of interstate telecommunications carriers, separated into revenues from intrastate services and revenues from interstate services. The Telecommunications Industries Analysis Project (TIAP) has produced such revenue estimates. TIAP performed a complex estimation process for each major sector in the telecommunications industry for the year 1995. In all cases, the revenue estimates were calculated net of payments to other carriers, as recommended by the Joint Board.

IV.Option 1 - Interstate Revenues Only

The first major option for the federal program is the "interstate revenues option": the FCC universal service charge would apply to the interstate revenues of carriers that provide interstate services, but not on their intrastate revenues. The second major option, examined in section V below, is the "combined revenues option": the FCC universal service charge would apply to the combined (intrastate and interstate) revenues of carriers that provide interstate services.

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[36] 47 U.S.C. § 254(h)(3).

A. Legal and Policy Issues

This section summarizes the legal and policy arguments in favor of the interstate revenues option.[39] The overall conclusion was aptly summarized by a dissenting Joint Board member:

> The jurisdiction between the (FCC) and the states is distinct. The (FCC) possesses authority to assess interstate revenues, while the state commissions have authority to utilize intrastate revenues.[40]

A key legal issue is whether the FCC has authority to impose a charge on the intrastate revenues of interstate carriers. All observers agree that the Act does not contain any explicit authority for the charge. Without such an explicit grant, the only option available to the FCC may be the interstate revenues option.

A narrow view of the FCC's jurisdiction may be supported by another provision in the Act stating that the Act shall not be "construed to modify, impair, or supersede Federal, State or local law unless expressly so provided."[41] If the Act gives the FCC authority to levy charges on intrastate revenues, that authority may need to be explicit. However, since the act contains no such explicit statement, the FCC may be without authority to impose a charge on intrastate revenues.

Legislative history may provide added support for a narrow reading of the FCC's authority. The universal service provisions in the Act were derived largely from the Senate bill. The Senate report on the bill states that the purpose of the new section on universal service was "to make explicit the current implicit authority of the FCC and the States to require common carriers to provide universal service."[42] This may imply that the intent of the Congress was not to alter the authority of the FCC.

A second and related legal question is whether the combined revenue option would violate the jurisdictional separation between the states and the FCC. Historically, the FCC has had no authority to regulate intrastate services (except in limited instances). This

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[39] Arguments in favor of the combined revenues option are summarized below in the section V.

[40] Separate Statement of Commissioner Schoenfelder, members of the Joint Board. *See also*, Separate Statement by Commissioner McClure.

[41] Telecommunications Act of 1996, Sec. 601(c).

[42] Senate Report on S.652, at 25.

principle is established in section 2(b) of the Communications Act of 1934. It states that the FCC has no jurisdiction over:

> charges, classifications, practices, services, facilities, or regulations for or in connection with intrastate communication service by wire or radio of any carrier.[43]

This portion of the 1934 Act remains in effect, and was not amended by the 1996 Act. If the FCC were to subject intrastate services to a charge for the support of federal universal service programs, that action might violate section 2(b) of the 1934 Act.

A third legal question arises from the contrast between the language in the Act relating to contributions to federal universal service programs and the parallel but different language relating to contributions to state programs. For federal programs, the Act requires a contribution from "every telecommunications carrier that provides *interstate* service" ("interstate carriers").[44] By contrast, state universal service programs can require support from "every telecommunications carrier that provides *intrastate* service" ("intrastate carriers").[45]

Congress may have intended by this language to accomplish two things: to identify which carriers can be required to contribute to universal service; and to define the revenue streams that are accessible to FCC universal service charges.

If companies providing interstate access are considered providers of "interstate services,"[46] then all local exchange carriers (and virtually all other telecommunications providers as well) would be "interstate carriers" and within reach of the FCC's universal service charge. Using this interpretation, the adjective "interstate" in the Act might be rendered virtually meaningless.

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[43] 47 U.S.C. § 152(b).

[44] 47 U.S.C. § 254(d).

[45] 47 U.S.C. § 254(f).

[46] The Joint Board recommended that the interstate portion of access services be considered interstate service for purposes of determining which carriers must contribute to federal universal service programs. Joint Board Recommendations, ¶ 785. The Joint Board did not, however, provide a legal basis for that recommendation.

Local exchange carriers that do not *directly* provide interstate services may not be required to contribute to the federal universal service programs because they are only "connecting carriers" exempt from the FCC's jurisdiction under 47 U.S.C. § 152(b)(3).

If the FCC adopts the interstate revenues option, states that enact their own supplemental programs might be likely to finance those programs by a charge on the intrastate revenues of intrastate carriers.[47] In that event, customers would pay at two rates. Payment for interstate services would need to cover the carrier's contributions to federal programs. Charges for intrastate services, however, would need to cover the carrier's contributions to any state program.

This arrangement would financially benefit some customers. For example, a residential customer whose primary telecommunications usage is intrastate might prefer a system in which charges on interstate services are relatively high, but charges on intrastate services are low.

The interstate revenues option may minimize the federal role in the direct financing of telecommunications. The states may have an interest, independent of jurisdictional separations, in keeping the size of the federal program at modest levels, so long as the program meets the goals stated in the Act. To the extent that the combined revenues option facilitates a larger federal program than is necessary, the interstate revenues option may be preferable.

Even if the combined revenues option does not violate jurisdictional statutes, it may nevertheless be an undesirable allocation of responsibility between the federal and state governments. The jurisdictional separation between state and federal jurisdictions is based upon broad policy considerations, including federalism. For the FCC to impose a charge on intrastate revenues may inappropriately intrude into an area traditionally left to state regulation.

The combined revenues option might produce an inequitable and discriminatory basis for contributions. All observers agree that the intrastate revenues of intrastate carriers are beyond the reach of the FCC's universal service programs. However, the same services, when provided by a carrier engaged in interstate services, would be subject to the charge. This might put the interstate carrier at a competitive disadvantage and therefore violate the principle of competitive neutrality.[48]

While revenues from interstate services are currently only about 40 percent of total revenues, the size of revenues in the interstate jurisdiction may expand rapidly in the

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[47] This state behavior is assumed in the financial projections below.

[48] *See*, Joint Board Recommendations, Separate Statement of Commissioner McClure, Concurring in Part and Dissenting in Part.

future. The expected entry of regional Bell operating companies into the interstate market might reinforce this trend.[49] This could, over time, reduce the charge rate needed to finance the FCC's universal service programs using only interstate revenues.

B. Financial Effects

The interstate revenue base of interstate carriers, net of payments to other carriers, is approximately $69 billion per year.

1. Option 1-A: Full Funding at $20

The cost and charge rates necessary for a high cost program are shown in Table 1-A, assuming a revenue benchmark of $20 per line per month. State-by-state details of this plan are shown in an Attachment.

Table 1-A
High Cost Program
Interstate Revenue - Full Funding of Need - Benchmark at $20

Program Characteristic	BCM2	Hatfield
Dollars Distributed (billion)	$14.6	$5.3
FCC Charge Rate	21.3%	7.8%

For the BCM2 model, the results show that if the federal high cost program were to be fully funded at the $20 level, and if that funding were derived from a charge on interstate services, the resulting charge rate would exceed 20 percent. The rate for the Hatfield model is approximately 8 percent.

This federal charge may be higher than the rates that would be imposed by most states on intrastate revenues; and some states may not impose any charge at all on intrastate revenues. This could create a risk of bypass. Carriers might begin to inappropriately

[49] To the extent that RBOC entry merely takes market share away from existing carriers, the total size of the interstate revenue pool will not increase. However, increased competition following RBOC entry may reduce prices. Over the short term this could decrease interstate revenues. Over a longer term, price elasticity may cause customer demand to increase faster than prices decrease.

classify services as intrastate services in order to avoid the federal charge. Some carriers might create subsidiaries solely to provide interstate services or intrastate services.

Since option 1-A requires a substantial surcharge on interstate revenues, it might tend to produce higher toll charges for interstate traffic. While interstate toll rates are now lower in many states than intrastate toll rates, option 1-A might reverse this pattern.

Under option 1-A, the FCC would finance all of the revenue need of federal programs by a charge on the interstate revenue base. This would leave the intrastate revenue base entirely available to the states, and might encourage the states to enact more ambitious universal service programs.

2. Option 1-B: Raise the Benchmark to $30

If the FCC decides to levy charges only on interstate revenues, it may want to identify mechanisms to reduce overall program cost.[50] Options 1-B through 1-E discuss several ways to accomplish this.

Option 1-B raises the revenue benchmark from $20 to $30. This might be appropriate for either of two reasons. First, the FCC might conclude that a benchmark of $30 is sufficient to meet the requirements of the Act. Alternatively, the FCC might conclude that it is appropriate for the states and the FCC to share the responsibility for keeping rates affordable.

The cost and charge rates necessary for a program with a benchmark of $30 are shown in Table 1-B. State-by-state details of this plan are shown in an Attachment.

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[50] The Joint Board recognized that the revenue benchmark and the method used to obtain revenues to fund the federal high cost program are related issues. Joint Board Recommendations, ¶s 299, 309.

Table 1-B
High Cost Program
Interstate Revenue - Full Funding of Need
Benchmark at $30

Program Characteristic	BCM2	Hatfield
Dollars Distributed (billion)	$7.4	$2.7
FCC Charge Rate	10.8%	3.9%
State charge rate for $20 benchmark:		
Alaska	26.8%	N.A.
District of Columbia	0.8%	0.0%
minimum rate (excluding D.C.)	4.8%	0.6%
maximum rate (excluding Alaska)	13.6%	9.5%
average rate	9.4%	3.9%

Option 1-B produces a smaller federal program than option 1-A. However, if states desire to support revenues at the $20 level, they would need a supplemental state program. Assuming such programs are funded by a charge on intrastate services, under BCM2 the rates for such state programs would vary from 4.8% percent to 13.6% percent (excluding Alaska and D.C.).

Consider the effect on a customer who purchases $20 in interstate services and $20 in intrastate services in a month, and lives in a state with a supplemental program at the average rate under BCM2 of 9.4 percent. The customer's $20 payment for interstate service would include $2.16 that the interstate carrier will pay into the federal fund. The customer's $20 payment for intrastate service would include $1.88 that the intrastate carrier will pay into the state fund. Thus the total included payment for universal service would be $4.04.

Under BCM2 and Hatfield, if all states and the District of Columbia were to adopt such programs, the average charge rate on intrastate revenues would be the same as or lower than the charge rate imposed on interstate services by the FCC.

3. Option 1-C: Raise the Benchmark to $40

If the revenue benchmark were further increased to $40 per month, the size of the federal program could be further reduced. The cost and charge rates necessary for a program with a benchmark of $40 are shown in Table 1-C. State-by-state details of this plan are shown in an Attachment.

Table 1-C
High Cost Program
Interstate Revenue - Full Funding of Need
Benchmark at $40

Program Characteristic	BCM2	Hatfield
Dollars Distributed (billion)	$4.3	$1.3
FCC Charge Rate	6.2%	1.8%
State charge rate for $20 benchmark:		
Alaska	43.0%	N.A.
District of Columbia	0.9%	0.0%
minimum rate (excluding D.C.)	6.4%	0.0%
maximum rate (excluding Alaska)	23.3%	15.3
average rate	14.3%	6.2%

Option 1-C produces an even smaller federal program than option 1-B. However, if states desire to produce support revenues at the $20 level, larger supplemental state programs would be needed. The charge rates for state programs under BCM2 (imposed only on intrastate revenues) would vary from 6.4% percent to 23.3% percent (excluding Alaska and D.C.).

Under BCM2 and Hatfield, if all states and the District of Columbia were to adopt such programs, the average charge rate on intrastate revenues would be more than 230 percent of the charge rate imposed on interstate services by the FCC.

4. Option 1-D: Pay Only a Portion of Need

A different way to reduce federal program cost would be to utilize a relatively low revenue benchmark, but pay only part of the revenue need.[51] The rationale for such a reduction would be that the FCC should not support 100 percent of the unseparated cost of the local loop, but only an interstate portion of that cost, as determined by the separations process. The interstate revenue stream nationally is estimated at approximately 40 percent of the nation's total telecommunications revenues. That 40% figure has been used in option 1-D.[52]

The cost and charge rates necessary for a program with a $20 revenue benchmark and 40% federal funding are shown in Table 1-D. In addition, Table 1-D shows the average charge rate that would be needed by state programs to meet the remaining 60% need. State-by-state details of this plan are shown in an Attachment.

Table 1-D
High Cost Program
Interstate Revenue - Benchmark at $20
40% Federal Funding of Need

Program Characteristic	BCM2	Hatfield
Dollars Distributed (billion)	$5.9	$2.1
FCC Charge Rate	8.5%	3.1%
State charge rate for 60% unfunded:		
Alaska	50.0%	N.A.
District of Columbia	0.5%	0.0%
minimum rate (excluding D.C.)	4.4%	0.4%
maximum rate (excluding Alaska)	31.8%	19.3%
average rate	14.0%	5.6%

Option 1-D produces a smaller federal program than option 1-A. However, if states desire to produce total support equal to the revenue need identified by the $20 benchmark,

[51] As discussed above, "revenue need" is the difference between cost, as measured by a proxy model, and the revenue benchmark.

[52] Other possible choices might be the percentage of minutes of use attributable to interstate usage, the present allocation of loop plant to interstate (25%) or interstate usage of facilities.

a supplemental state program will be needed. Under BCM2 the charge rates for such state programs would vary from 4.4% percent to 31.3% percent (excluding Alaska and D.C.).

Under BCM2 and Hatfield, if all states and the District of Columbia were to adopt such programs, the average charge rate on intrastate revenues would be more than 160 percent of the charge rate imposed on interstate services by the FCC.

5. Option 1-E: Impute a State Program

In option 1-D, it was assumed that all states would receive 40 percent funding of the identified revenue need. States vary, however, in both their need and their ability to support supplemental programs from intrastate revenues. A state with a small need and large intrastate revenue pool could support 60% of its revenue need at a low rate. Conversely, states with large needs and small intrastate revenue pools might need to impose a relatively high rate.

If the FCC desired to equalize this disparity, it could increase support to states with a high need-to-resources ratio, and decrease support to states with a low need-to-resources ratio. One way to accomplish this would be to assume that each state will impose a uniform charge on its own intrastate revenues. Federal distributions to each state then would be equal to the difference between the state's revenue need and the revenue imputed to the state program.[53] States with a high need-to-resources ratio receive a high proportion of federal support. States with a low need-to-resources ratio would receive little or no federal support.

For example, under the BCM2 model at a $20 benchmark, the FCC could meet the revenue need of all carriers with a charge of 8.9% on combined (interstate and intrastate) revenues.[54] However, under Option 1-E, the federal program would levy a charge *only on the interstate revenues* of interstate carriers. This would reduce both the revenues and the distribution required of the federal program.

On the distribution side, the need of each essential carrier would be reduced by the amount that a state-supported high cost fund would contribute, assuming the state were to

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[53] One possible objection to this approach is that the federal program cannot presume the prior existence of a state program. This may not be permissible if the federal system by itself must be sufficient to meet the statutory criterion that federal universal service programs ensure that rates in rural, insular, and high cost areas are reasonably comparable to rates in urban areas. 47 U.S.C. §§ 254(b)(3), (f).

[54] See Table 2-A, below.

impose an 8.9% percent charge on intrastate revenues in that state.[55] No state would actually be required to have such a supplemental state program, but federal support would be calculated assuming such a program did exist.

Under option 1-E, each state would fall into one of two classes. In the District of Columbia and in a few other states, a charge of 8.9% on intrastate revenues is more than is needed to meet the revenue needs of that state. In those states, no federal assistance would be given and the state program could meet the revenue need with a charge on intrastate revenue of 8.9% or less.

In other states, a charge rate of 8.9% could not meet all of the revenue need. There, the federal program would pay the difference between the imputed charges from the state program and the state's revenue need.

Because of this, the final federal charge rate on interstate services would actually be slightly higher than 8.9 percent. This is because not all intrastate revenue in the nation will actually pay at the imputed rate; the charge rate in a few states will be lower. The federal rate on interstate revenue must therefore increase slightly, from 8.9 to 9.3 percent.[56]

The cost and national charge rates necessary for option 1-E are shown in Table 1-E. In addition, the table shows the average charge rate that would be needed by state programs to meet the remaining need. State-by-state details of this plan are shown in an Attachment.

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[55] Many state school aid formulas work in the same fashion, providing state assistance only after the revenues produced by a reasonable local tax effort have been imputed.

[56] This difference between the imputed intrastate charge rate and the final interstate charge rate could be reduced or eliminated by successive iterations of the calculation.

Table 1-E
High Cost Program
Interstate Revenue - Benchmark at $20
Imputed State Programs

Program Characteristic	BCM2	Hatfield
Dollars Distributed (billion)	$6.4	$2.6
Rate for Imputed State Program	8.9%	3.2%
Number of jurisdictions that can meet their revenue need at a lower rate	4	12
Final FCC Charge Rate	9.3%	3.8%
Final State Charge Rate:		
Alaska	8.9%	N.A.
District of Columbia	0.9%	0.0%
minimum rate (excluding D.C.)	7.4%	0.0%
maximum rate (excluding Alaska)	8.9%	3.2%
average rate	8.7%	2.8%

Because of the effect of imputing a state program, option 1-E produces a smaller federal program than option 1-A, even though the $20 benchmark has been used. Program cost is roughly comparable to option 1-B ($7.4 billion under BCM2), the option with a $30 benchmark.

If a state desires to produce total support equal to the revenue need identified by the $20 benchmark, it will need to operate a supplemental state program. Under BCM2 the charge rates for such state programs would vary from 0.0% percent to 8.9% percent (excluding Alaska and D.C.).

Under BCM2 and Hatfield, if all states and the District of Columbia were to adopt such programs, the average charge rate on intrastate revenues would be approximately 90 percent of the charge rate imposed on interstate services by the FCC. This is less state-to-state variation than has been encountered under options 1-B, 1-C or 1-D.

Option 1-E may create a dynamic not encountered earlier. States vary considerably in the balance between their revenue needs and their internal resources. Because option 1-E imputes revenue from a state program, states with large resources and small needs might not receive any federal high cost support. Over the long run, exclusion of a significant number of states could reduce the political support for the program.

C. Summary of Effects

The FCC may be considering a variety of revenue benchmarks, but $20 has been used here as the base case. If the FCC adopts the interstate revenues option, the charge rate necessary to maintain a $20 revenue benchmark would be 21.3 percent under BCM2 or 7.8 percent under Hatfield.[57]

The FCC could reduce program cost in any of three ways: using a higher benchmark; paying only a portion of revenue need; or imputing a state program. Each method would reduce funding received by each state, and might encourage states to enact parallel programs based upon charges on intrastate revenues.[58] The charge rates necessary for state programs would vary by state and by option. Each state commission will want to examine the appendices to determine the degree to which each option achieves the statutory objectives and how it affects that state.

V. Option 2 - Combined Revenues

A. Legal and Policy Issues

This section summarizes the legal and policy arguments in favor of the combined revenues option.[59]

A key issue is whether the FCC has authority to adopt the combined revenues option, and in particular whether it has authority to levy a charge on the *intrastate* revenues of interstate carriers.

Subsections 254(c) and (d) of the Act authorize the FCC to establish universal service programs and to develop methods of financing those programs. Subsection (d) requires "every telecommunications carrier that provides interstate service" to contribute to federal universal service programs. This may be sufficient authority for the FCC to adopt the combined revenues option. If so, this authority would be independent of the FCC's other ratemaking powers.

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[57] To the extent that a higher benchmark is appropriate, the charge rate could be considerably lower.

[58] As noted above, the Act may not permit the FCC to rely on state programs to keep basic rates reasonably comparable between urban and high cost areas.

[59] Arguments in favor of the interstate revenues option were summarized above in the section IV.

The act is not entirely silent about standards for the FCC's collection mechanism. It requires the FCC to finance universal service programs by "equitable and nondiscriminatory" contributions.[60] The Act does not, however, explain how "equitable and "nondiscriminatory should be interpreted.[61]

Most observers agree that it would be equitable and nondiscriminatory for the FCC to support its universal service programs by a surcharge on revenues.[62] However, the Act does not explicitly require that collections be based upon carrier revenues. If it is equitable and nondiscriminatory for the FCC to impose a charge on any revenues, it may be equitable and nondiscriminatory to impose that charge on both intrastate and interstate revenues.[63]

A second question is whether the combined revenue option would respect the jurisdictional separation between the states and the FCC. The jurisdictional separation statute gives the states sole jurisdiction over:

> charges, classifications, practices, services, facilities, or regulations for or in connection with intrastate communication service by wire or radio of any carrier.[64]

There may be a difference between the setting of intrastate rates and conditions of service, which can be accomplished only by the states, and the collection of funds to finance universal service programs. To the extent that section 254(d) of the Act gives the FCC independent authority to collect funds, the jurisdictional separation statute, quoted above, may not restrict the method of universal service revenue collection.

If collections from intrastate revenues violate the separations statute, the same argument might also apply to the *distribution* of universal service funds. The explicit purpose of high cost program is to provide added revenue in high cost areas so that local rates are reasonable.[65] Local rates, however, are within the jurisdiction of the states. If the separation of jurisdictions prohibits the FCC from charging intrastate revenue streams, it

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[60] 47 U.S.C. § 254(b)(4).

[61] For example, funding for the existing high cost program is derived solely from interexchange carriers, based upon a monthly assessment on each line presubscribed to that carrier. This may not satisfy the test, since it requires only interexchange carriers to contribute to universal service.

[62] Joint Board Recommendations, ¶ 807.

[63] The question of which carriers can be subjected to that charge is discussed below.

[64] 47 U.S.C. § 152(b).

[65] This is also the purpose of the existing high cost fund.

may also prohibit the FCC from distributing money to reduce local rates. But this is illogical, because section 254 of the Act requires the FCC to do exactly that. This may cast doubt on the validity of the argument's underlying premise.

A third question is the meaning of the difference language used in the Act regarding carriers subject to charges for federal universal service programs and carriers subject to charges for state programs. As mentioned above, the Act requires that funding for the federal program be derived from "every telecommunications carrier that provides *interstate* service."[66] Contrasting language requires that state universal service programs be supported by "every telecommunications carrier that provides *intrastate* service."[67]

The plain meaning of this language may express Congressional intent. That is, Congress may have intended only to make a statement about the identity of those who could be required to make such contributions, and not to make any statement about the basis for those contributions.

Congress's motive for limiting contributions to carriers who provide interstate services may have been to ensure that each carrier's liability for universal service contributions arises only when that carrier has a sufficient nexus to interstate activity. By limiting contributions to federal programs solely to carriers engaged in interstate commerce, Congress may have been responding to a real or perceived need to avoid the taxation of entirely intrastate enterprises. This restriction may prove to have only minimal practical effect, but that fact in itself may not be sufficient to infer a different motive.

A fourth legal question is the meaning of the statutory language requiring that:

> All providers of telecommunications services should make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service.[68]

Since this provision refers to "universal service," it presumably applies to both federal programs under subsection (c) and (d) and state programs under subsection (f). This language may support the combined revenues option. As seen above, the interstate revenues option may produce charge rates as high as 20 percent **(verify number)**. To the

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[66] 47 U.S.C. § 254(d).

[67] 47 U.S.C. § 254(f).

[68] 47 U.S.C. § 254(b)(4).